OIPE

ENTERED

```
 2 <110> APPLICANT: Cahoon, Edgar B.
 3         Kinney, Anthony
 4         Klein, Thodore
 5         Lee, Jian Ming
 6         Pearlstein, Richard
 7         Rafalski, J. Antoni
 8         Shen, Jennie
 9         Thorpe, Cathy
10         Tingey, Scott
11         Weng, Zude
13 <120> TITLE OF INVENTION: Plant Lipoxygenases
15 <130> FILE REFERENCE: BB1333 US CIP
C--> 17 <140> CURRENT APPLICATION NUMBER: US/10/059,909
C--> 18 <141> CURRENT FILING DATE: 2002-01-29
20 <150> PRIOR APPLICATION NUMBER: 09/501,422
21 <151> PRIOR FILING DATE: 2000-02-09
23 <150> PRIOR APPLICATION NUMBER: 60/119,597
24 <151> PRIOR FILING DATE: 1999-02-10
26 <160> NUMBER OF SEQ ID NOS: 21
28 <170> SOFTWARE: Microsoft Office 97
30 <210> SEQ ID NO: 1
31 <211> LENGTH: 565
32 <212> TYPE: DNA
33 <213> ORGANISM: Momordica charantia
35 <220> FEATURE:
36 <221> NAME/KEY: unsure
37 <222> LOCATION: (453)
38 <223> OTHER INFORMATION: n = A, C, G, or T
40 <220> FEATURE:
41 <221> NAME/KEY: unsure
42 <222> LOCATION: (469)
43 <223> OTHER INFORMATION: n = A, C, G, or T
45 <220> FEATURE:
46 <221> NAME/KEY: unsure
47 <222> LOCATION: (499)
48 <223> OTHER INFORMATION: n = A, C, G, or T
50 <220> FEATURE:
51 <221> NAME/KEY: unsure
52 <222> LOCATION: (506)
53 <223> OTHER INFORMATION: n = A, C, G, or T
55 <220> FEATURE:
56 <221> NAME/KEY: unsure
57 <222> LOCATION: (527)
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RAW SEQUENCE LISTING                    DATE: 02/22/2002
PATENT APPLICATION:  US/10/059,909      TIME: 15:39:00

Input Set : A:\BB1333 US CIP Seq Listing.txt
Output Set: N:\CRF3\02222002\J059909.raw

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 58 <223> OTHER INFORMATION: n = A, C, G, or T
 60 <220> FEATURE:
 61 <221> NAME/KEY: unsure
 62 <222> LOCATION: (529)
 63 <223> OTHER INFORMATION: n = A, C, G, or T
 65 <220> FEATURE:
 66 <221> NAME/KEY: unsure
 67 <222> LOCATION: (553)
 68 <223> OTHER INFORMATION: n = A, C, G, or T
 70 <220> FEATURE:
 71 <221> NAME/KEY: unsure  .
 72 <222> LOCATION: (556)
 73 <223> OTHER INFORMATION: n = A, C, G, or T
 75 <400> SEQUENCE: 1
 76 gagaatgttt gggattggga agagtatcat agagggcgcc gtgaacacta ccggcgacct   60
 77 cgccggctcc gtcatcaatg ccggcggcaa tattgtaggg cgtgtcacca atatcggcgg  120
 78 gaagaagatc aaagggacgg tggttcttat gagaagcaat gttttggact tcaccgaatt  180
 79 tcattcctca cttcttgacg gcgtcactga gctcttgggc ggcggaattt cattgcaact  240
 80 tatcagtgct actcacgctt ccaacgactc gcgagggaaa gttggaaagg gggcgtttct  300
 81 ggagaggtgg ctgacttcag ttccgccact gttcgctgga gagtctgtgt ttcaagtgaa  360
 82 ctttgattgg gaagagaact ttgggatttc caaggagctt tcttcataaa aaatgggcac  420
W--> 83 accagtgagt tcttcctcaa gtctgtaact ccnggaggat ttcctggcnt tggaaggtcc  480
W--> 84 attttgactg caactcaang gtttancctt ctcgaagata aagaaantng cattttcttt  540
W--> 85 gcaaaccata aanccntcca ttcaa                                         565
 87 <210> SEQ ID NO: 2
 88 <211> LENGTH: 170
 89 <212> TYPE: PRT
 90 <213> ORGANISM: Momordica charantia
 92 <220> FEATURE:
 93 <221> NAME/KEY: UNSURE
 94 <222> LOCATION: (155)
 95 <223> OTHER INFORMATION: Xaa = ANY AMINO ACID
 97 <220> FEATURE:
 98 <221> NAME/KEY: UNSURE
 99 <222> LOCATION: (164)
100 <223> OTHER INFORMATION: Xaa = ANY AMINO ACID
102 <220> FEATURE:
103 <221> NAME/KEY: UNSURE
104 <222> LOCATION: (166)
105 <223> OTHER INFORMATION: Xaa = ANY AMINO ACID
107 <400> SEQUENCE: 2
108 Met Phe Gly Ile Gly Lys Ser Ile Ile Glu Gly Ala Val Asn Thr Thr
109   1               5                  10                  15
111 Gly Asp Leu Ala Gly Ser Val Ile Asn Ala Gly Gly Asn Ile Val Gly
112              20                  25                  30
114 Arg Val Thr Asn Ile Gly Gly Lys Lys Ile Lys Gly Thr Val Val Leu
115          35                  40                  45
117 Met Arg Ser Asn Val Leu Asp Phe Thr Glu Phe His Ser Ser Leu Leu
118      50                  55                  60
```

RAW SEQUENCE LISTING                          DATE: 02/22/2002
PATENT APPLICATION:  US/10/059,909            TIME: 15:39:00

Input Set : A:\BB1333 US CIP Seq Listing.txt
Output Set: N:\CRF3\02222002\J059909.raw

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    120 Asp Gly Val Thr Glu Leu Leu Gly Gly Gly Ile Ser Leu Gln Leu Ile
    121  65              70              75              80
    123 Ser Ala Thr His Ala Ser Asn Asp Ser Arg Gly Lys Val Gly Lys Gly
    124              85              90              95
    126 Ala Phe Leu Glu Arg Trp Leu Thr Ser Val Pro Pro Leu Phe Ala Gly
    127             100             105             110
    129 Glu Ser Val Phe Gln Val Asn Phe Leu Gly Arg Glu Leu Trp Asp Phe
    130             115             120             125
    132 Gln Gly Ala Phe Phe Ile Lys Asn Gly His Thr Ser Glu Phe Phe Leu
    133         130             135             140
W--> 135 Lys Ser Val Thr Pro Gly Gly Phe Pro Gly Xaa Lys Val His Phe Asp
    136 145             150             155             160
W--> 138 Cys Asn Ser Xaa Val Xaa Pro Ser Arg Arg
    139             165             170
    141 <210> SEQ ID NO: 3
    142 <211> LENGTH: 639
    143 <212> TYPE: DNA
    144 <213> ORGANISM: Impatiens balsamia
    146 <220> FEATURE:
    147 <221> NAME/KEY: unsure
    148 <222> LOCATION: (488)..(489)
    149 <223> OTHER INFORMATION: n = A, C, G, or T
    151 <220> FEATURE:
    152 <221> NAME/KEY: unsure
    153 <222> LOCATION: (494)
    154 <223> OTHER INFORMATION: n = A, C, G, or T
    156 <220> FEATURE:
    157 <221> NAME/KEY: unsure
    158 <222> LOCATION: (526)
    159 <223> OTHER INFORMATION: n = A, C, G, or T
    161 <220> FEATURE:
    162 <221> NAME/KEY: unsure
    163 <222> LOCATION: (530)
    164 <223> OTHER INFORMATION: n = A, C, G, or T
    166 <220> FEATURE:
    167 <221> NAME/KEY: unsure
    168 <222> LOCATION: (537)
    169 <223> OTHER INFORMATION: n = A, C, G, or T
    171 <220> FEATURE:
    172 <221> NAME/KEY: unsure
    173 <222> LOCATION: (549)
    174 <223> OTHER INFORMATION: n = A, C, G, or T
    176 <220> FEATURE:
    177 <221> NAME/KEY: unsure
    178 <222> LOCATION: (572)
    179 <223> OTHER INFORMATION: n = A, C, G, or T
    181 <220> FEATURE:
    182 <221> NAME/KEY: unsure
    183 <222> LOCATION: (610)
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RAW SEQUENCE LISTING                    DATE: 02/22/2002
PATENT APPLICATION:  US/10/059,909      TIME: 15:39:00

Input Set : A:\BB1333 US CIP Seq Listing.txt
Output Set: N:\CRF3\02222002\J059909.raw

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184 <223> OTHER INFORMATION: n = A, C, G, or T
186 <220> FEATURE:
187 <221> NAME/KEY: unsure
188 <222> LOCATION: (617)
189 <223> OTHER INFORMATION: n = A, C, G, or T
191 <220> FEATURE:
192 <221> NAME/KEY: unsure
193 <222> LOCATION: (631)
194 <223> OTHER INFORMATION: n = A, C, G, or T
196 <400> SEQUENCE: 3
197 gttgaagagg caatgaatca aaacaagatt ttcatattag atcaccatga tagtttgatg  60
198 ccatacttgg ggagaatcaa cacaaccacc acaaagactt atgcttcaag gactcttctt 120
199 atccttagga aagatgggac tttgatgcca ttagccattg agctaagcct gcccaaccca 180
200 agaggagatg aatatggtgc catatgcaaa gtctacaccc cggctcaaca tggtgtagaa 240
201 gcctcccttt ggcagcttgc ttaagcctat gtcgtggtta acgactcttg tatccacgaa 300
202 tccgtccagt cattgggttt gaacacgcaa gcagtgattg agcatttgta atcgcgacaa 360
203 acagacactt agcgtacttt atccgatcaa aagttgttca ccctcatttt ccgagacacg 420
204 attaacatta tgcatcgcaa ggaagtacta atcacgcggg ttgagttatt gagaaacttt 480
```
W--> 205 tcacatcnna gtanacagga gattcctccg caattacaag aatggntttn acgacantcc 540
W--> 206 tcccctggnc tattaaaggg gattgcgtaa gntataagaa aaccgtctcg caccaaaaga 600
W--> 207 tacctagccn tacggcnaga tttgttcata nacttggta                        639
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209 <210> SEQ ID NO: 4
210 <211> LENGTH: 102
211 <212> TYPE: PRT
212 <213> ORGANISM: Impatiens balsamia
214 <220> FEATURE:
215 <221> NAME/KEY: UNSURE
216 <222> LOCATION: (88)
217 <223> OTHER INFORMATION: Xaa = ANY AMINO ACID
219 <400> SEQUENCE: 4
220 Val Glu Glu Ala Met Asn Gln Asn Lys Ile Phe Ile Leu Asp His His
221  1               5                  10                  15
223 Asp Ser Leu Met Pro Tyr Leu Gly Arg Ile Asn Thr Thr Thr Thr Lys
224                 20                  25                  30
226 Thr Tyr Ala Ser Arg Thr Leu Leu Ile Leu Arg Lys Asp Gly Thr Leu
227             35                  40                  45
229 Met Pro Leu Ala Ile Glu Leu Ser Leu Pro Asn Pro Arg Gly Asp Glu
230         50                  55                  60
232 Tyr Gly Ala Ile Cys Lys Val Tyr Thr Pro Ala Gln His Gly Val Glu
233 65                  70                  75                  80
```
W--> 235 Ala Ser Leu Trp Gln Leu Ala Xaa Ala Tyr Val Val Val Asn Asp Ser
```
236                     85                  90                  95
238 Cys Ile His Glu Ser Val
239                100
241 <210> SEQ ID NO: 5
242 <211> LENGTH: 654
243 <212> TYPE: DNA
244 <213> ORGANISM: Zea mays
246 <220> FEATURE:
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247 <221> NAME/KEY: unsure
248 <222> LOCATION: (4)
249 <223> OTHER INFORMATION: n = A, C, G, or T
251 <220> FEATURE:
252 <221> NAME/KEY: unsure
253 <222> LOCATION: (9)
254 <223> OTHER INFORMATION: n = A, C, G, or T
256 <220> FEATURE:
257 <221> NAME/KEY: unsure
258 <222> LOCATION: (35)
259 <223> OTHER INFORMATION: n = A, C, G, or T
261 <220> FEATURE:
262 <221> NAME/KEY: unsure
263 <222> LOCATION: (37)
264 <223> OTHER INFORMATION: n = A, C, G, or T
266 <220> FEATURE:
267 <221> NAME/KEY: unsure
268 <222> LOCATION: (89)
269 <223> OTHER INFORMATION: n = A, C, G, or T
271 <220> FEATURE:
272 <221> NAME/KEY: unsure
273 <222> LOCATION: (123)
274 <223> OTHER INFORMATION: n = A, C, G, or T
276 <220> FEATURE:
277 <221> NAME/KEY: unsure
278 <222> LOCATION: (135)
279 <223> OTHER INFORMATION: n = A, C, G, or T
281 <400> SEQUENCE: 5
W--> 282 aggngcacnc tcccggaccg dataccggcg gcacnancgg ctgccgagga tcagctgcag  60
W--> 283 cgccaccgag gaggtcagcg ggcgcccgng tcgtcccgtc accgtggaga ggatgctcac 120
W--> 284 ggngacggcg tcggnggagg cgtcgccggc catcgggcag atgtacttcc agcgcgccgt 180
285 cgacgacatc ggcgacctcc tcggcaagac gctgctgctc gagctcgtca gctccgagct 240
286 cgacgcaaag tcgggcgtgg agaaaacgcg ggtgacggcg tacgcgcaca agacgctgcg 300
287 ggagggccac tacgaggcgg agttcaaggt gccggcgtcg ttcgggccgg tgggcgcggt 360
288 gctggtggag aacgagcacc acaaggaggt cttcatcaag gagatcaagc tcgtcaccgg 420
289 cggcgacagc agcaccgccg tcaccttcga ctgcaactcc tgggtgcact ccaagttcga 480
290 caacccggag aagcgcatct tcttcaccct caagtcatac ctgccgtccg acacgcccaa 540
291 ggggctggag gacctgagga agaaagacct gcaggcgctg cgcggcgacg ggcacggcga 600
292 gcgcaaggtg ttcgagcgcg tctacgacta cgacgtgtac aacgaactgg gcga        654
294 <210> SEQ ID NO: 6
295 <211> LENGTH: 147
296 <212> TYPE: PRT
297 <213> ORGANISM: Zea mays
299 <400> SEQUENCE: 6
300 Leu Leu Leu Glu Leu Val Ser Ser Glu Leu Asp Ala Lys Ser Gly Val
301  1               5                  10                  15
303 Glu Lys Thr Arg Val Thr Ala Tyr Ala His Lys Thr Leu Arg Glu Gly
304                 20                  25                  30
306 His Tyr Glu Ala Glu Phe Lys Val Pro Ala Ser Phe Gly Pro Val Gly
```

**VERIFICATION SUMMARY**                    DATE: 02/22/2002
**PATENT APPLICATION:**  **US/10/059,909**    TIME: 15:39:01

Input Set : **A:\BB1333 US CIP Seq Listing.txt**
Output Set: **N:\CRF3\02222002\J059909.raw**

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L:17   M:270 C: Current Application Number differs, Replaced Application Number
L:18   M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:83   M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:84   M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:85   M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:135  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:138  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:205  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:206  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:207  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:235  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:282  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:283  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:284  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:374  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:379  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:380  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:410  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:487  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:488  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:494  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:497  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:498  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:536  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:560  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:572  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:584  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:1394 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1397 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1400 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1465 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1468 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
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